

Supporting information

UV aged epoxy coatings – ecotoxicological effects and released compounds

Anna Maria Bell^a, Nils Keltsch^a, Peter Schweyen^a, Georg Reifferscheid^a, Thomas Ternes^a,
Sebastian Buchinger^{a*}

^aFederal Institute of Hydrology, Am Mainzer Tor 1, 56068 Koblenz, Germany

* Corresponding author, E-mail address: Buchinger@bafg.de

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Table SI 1: Average toxic effects and quantified target compounds in leachates of untreated (- UV) and UV-A irradiated (+ UV) coatings A and B. Experiments were performed with concentrated samples. The presented results are calculated for the original aqueous leachates under the assumption of a quantitative extraction of the compounds. Abbreviations of substances see Table 1.

	coating A		coating B	
	- UV	+ UV	- UV	+ UV
Estrogenic potential (EEQ [ng/l])	185	152	50.6	31.4
Toxicity to luminescent bacteria (EC50 [% of sample])	0.190	0.260	0.820	1.860
4tBP (c [µg/l])	15,000	9,400	3,320	1,840
BPA (c [µg/l])	2.30	14.3	0.90	16.9
4CP (c [µg/l])	< LOQ	< LOQ	< LOQ	0.23
BPA-I11 (c [µg/l])	< LOQ	0.72	< LOQ	1.37
BPA-I10 (c [µg/l])	< LOQ	0.78	< LOQ	1.20
Bis-HPPP (c [µg/l])	19.6	5.6	1.04	0.95
2PP (c [µg/l])	< LOQ	< LOQ	0.67	< LOQ

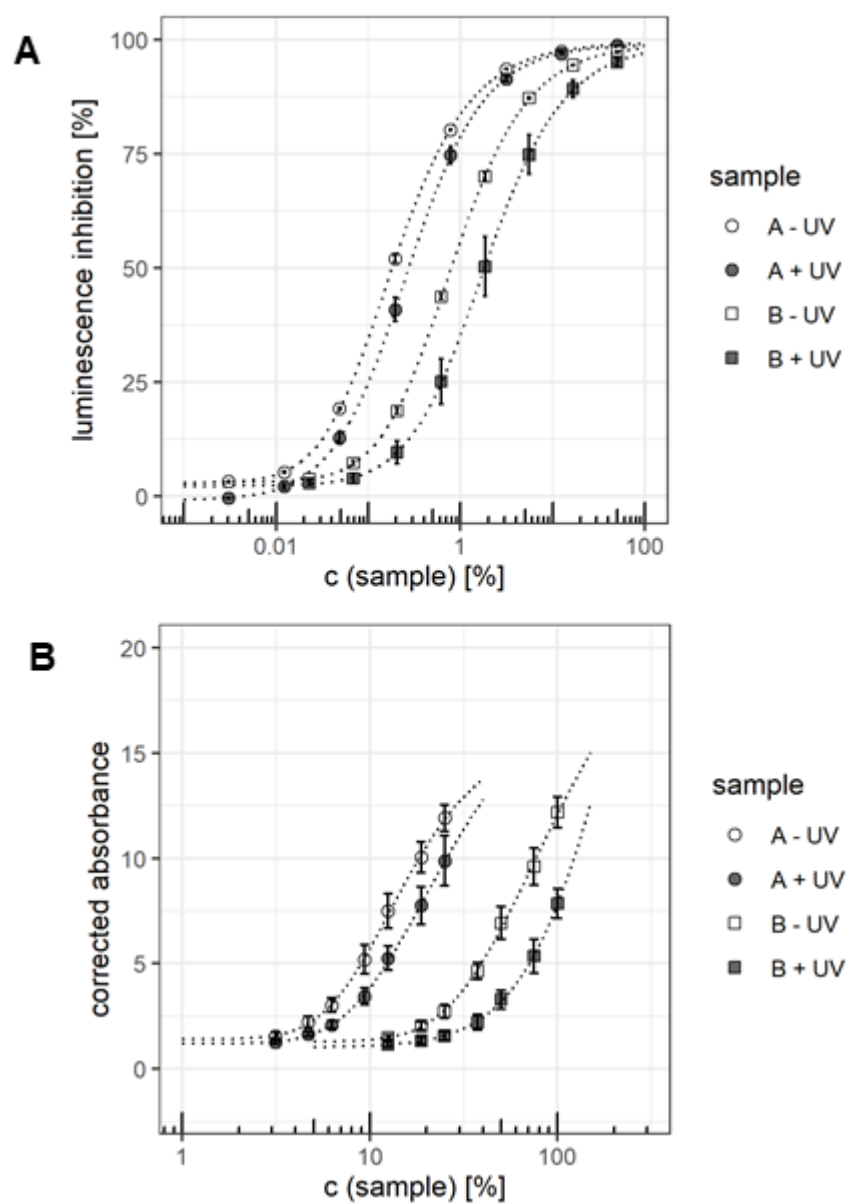


Figure SI 1: Concentration dependent toxicity in leachates of untreated (- UV) and UV-A irradiated (+ UV) coating A and B (mean \pm SE). Dotted lines show the 5-parametric log-logistic fit of data (equation 1). Each coating was leached three times and each leachate was tested three times. Effects were measured in concentrated samples and the results shown are calculated for the original aqueous leachates. **A**: Toxicity to luminescent bacteria shown as luminescence inhibition compared to control. **B**: Estrogenic activity detected as corrected absorbance with a recombinant yeast estrogen screen.

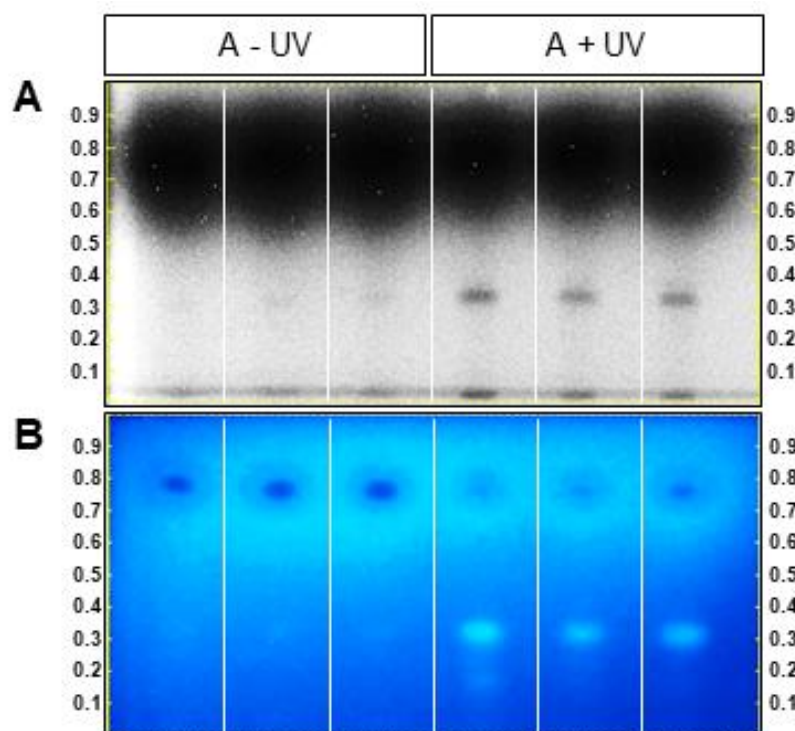


Figure SI 2: Toxicity in leachates of untreated (- UV) and UV-A irradiated (+ UV) coating A on HPTLC-plate. The ethanolic extracts (1000-fold concentrated) of all replicates were diluted 1:100, applied in a volume of 25 μ l each and chromatographically developed with ethyl acetate and n-hexane (35:65). For a better visualization brightness and contrast were adjusted. *A*: Black and white image of luminescence signals after approximately 11 min of exposition with luminescent bacteria. *B*: Fluorescence image of HPTLC coupled Yeast Estrogen Screen at an excitation wavelength of 366 nm.

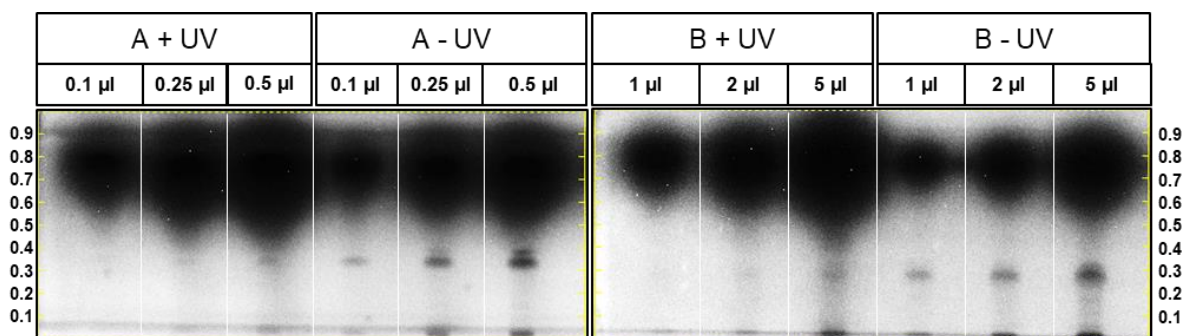


Figure SI 3: Dose dependent luminescence inhibition of selected samples of untreated (- UV) and UV-A irradiated (+ UV) coating A and B on HPTLC plates. The ethanolic extracts were diluted before application, the indicated volume corresponds to the absolute amount of original extracts (1000-fold concentrated). Black and white images were taken after chromatographic development with ethyl acetate and n-hexane (35:65) and exposition of luminescent bacteria for approximately 11 min. For a better visualization brightness and contrast were adjusted.

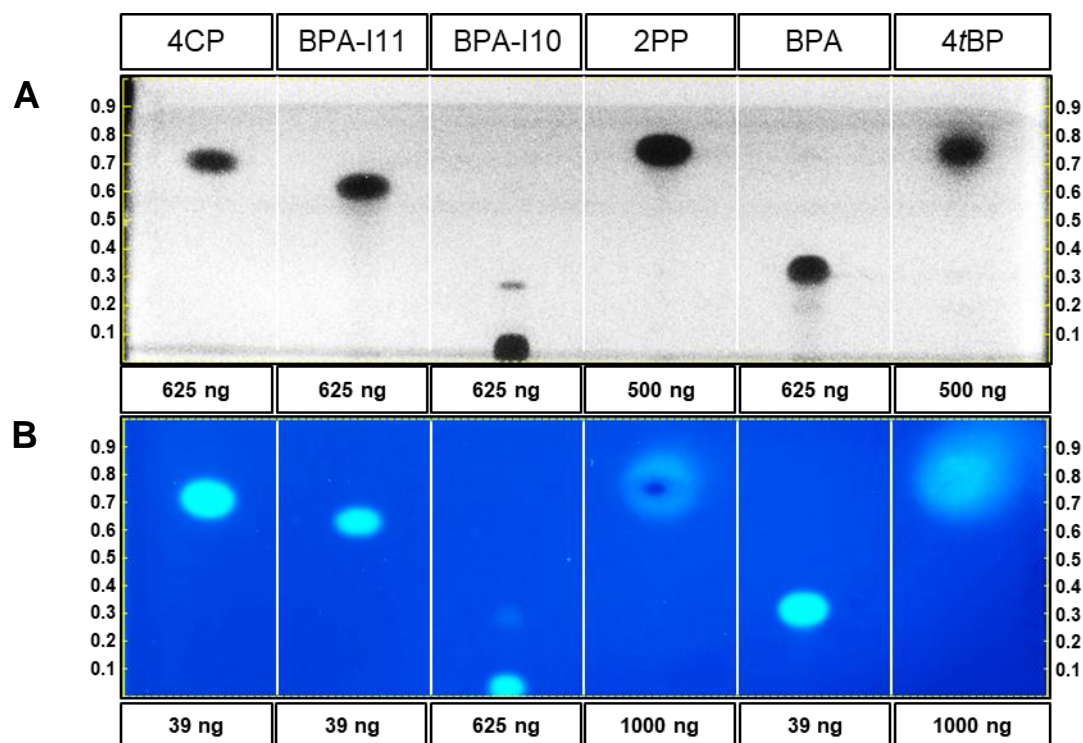


Figure SI 4: Toxicity of quantified compounds on HPTLC-plate. The standards were applied as ethanolic solutions and chromatographically developed with ethyl acetate and n-hexane (35:65). For a better visualization brightness and contrast were adjusted. *A*: Black and white image of luminescence signals after approximately 11 min of exposition with luminescent bacteria. *B*: Fluorescence image of HPTLC coupled Yeast Estrogen Screen at an excitation wavelength of 366 nm.

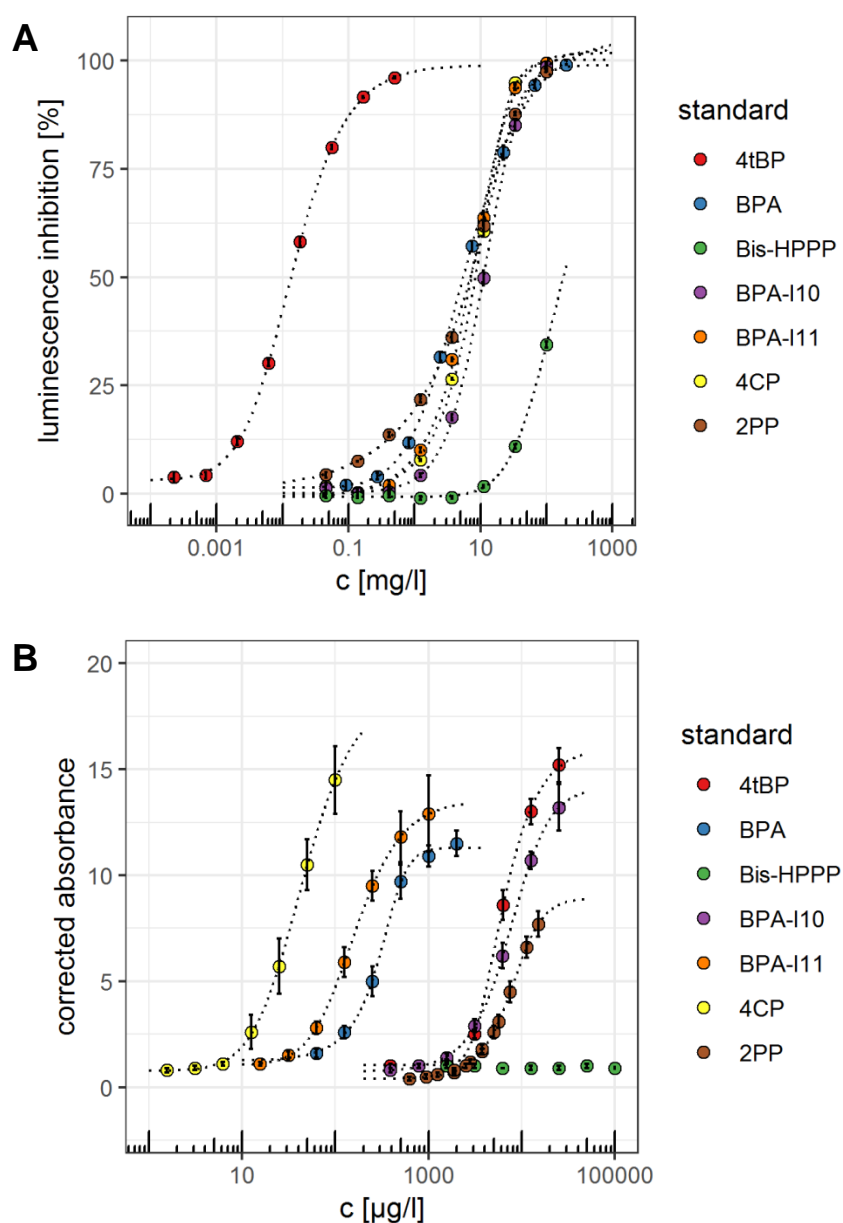


Figure SI 5: Concentration dependent toxicity (mean \pm SE) of quantified compounds (Table 2) in bioassays on microplate. Dotted lines show the 5-parametric log-logistic fit of data (equation 1). Each standard substance was tested at least three times **A: Toxicity to luminescent bacteria shown as luminescence inhibition compared to control. **B**: Estrogenic activity detected as corrected absorbance with a recombinant yeast estrogen screen.**